

CLAIMS

1. A method of forming a conductive pattern, comprising:
providing an article including a metal atom precursor capable of
conversion to elemental metal;
5 disproportionately exposing a first portion of the article to
electromagnetic radiation at a level greater than exposure at a second portion of the
article, in an amount and for a period of time sufficient to convert at least some of the
precursor at one of the portions to elemental metal at a conversion level greater than
conversion of precursor to elemental metal at the other portion; and
10 depositing metal, from a source external of the metal atom precursor,
proximate the portion of the article including metal atom precursor converted at a
greater conversion level in an amount greater than deposition of metal at the other
portion.
- 15 2. A method as in claim 1, wherein the metal atom precursor is a metal
salt.
3. The method of claim 2 wherein the metal salt is a silver halide.
- 20 4. The method of claim 1 wherein the metal deposited from the source
external of the metal atom precursor is deposited using electroless deposition.
5. The method of claim 1 wherein the article comprises photographic
film.
- 25 6. The method of claim 1 wherein the planar dimension of a portion of
the conductive pattern is less than about 100 μm in width.
7. The method of claim 6 wherein the planar dimension of a portion of
30 the conductive pattern is less than about 50 μm in width.

8. The method of claim 7 wherein the planar dimension of a portion of the conductive pattern is about 30 μm in width.

5 9. The method of claim 1 further comprising freeing the metal from the article.

10. The method as in claim 1, wherein the metal is deposited proximate the first portion while essentially no metal is deposited proximate the second portion.

10 11. The method as in claim 10 wherein the metal is deposited in an amount sufficient to provide conductivity to the first portion.

12. The method as in claim 10 further comprising electroplating a metal onto the first portion.
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13. The method as in claim 1, wherein the metal is deposited proximate the second portion while essentially no metal is deposited proximate the first portion.

14. The method as in claim 13 wherein the metal is deposited in an amount sufficient to provide conductivity to the second portion.
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15. The method as in claim 13 further comprising electroplating a metal onto the second portion.

25 16. A method comprising:
deforming a flexible metal structure from a first configuration to a second configuration; and
depositing auxiliary metal on the metal structure to the extent that the structure is self-supporting in the second configuration.

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17. The method of claim 16 wherein the flexible metal structure is disposed on photographic film.

18. The method of claim 17 further comprising freeing the structure from the photographic film.

19. A method comprising:
exposing photoresist to electromagnetic radiation through a metal mask;
developing the photoresist thereby forming a photoresist pattern;
directing a metal deposition composition to the metal mask via the photoresist pattern; and
depositing auxiliary metal on the metal mask from the deposition composition.

20. The method of claim 19 wherein the metal mask is produced by selectively exposing portions of the mask to electromagnetic radiation and adding metal to the same or to alternate portions of the mask using electroless deposition.

21. The method of claim 19 wherein the auxiliary metal is deposited via electroplating.

22. The method of claim 19 wherein the metal is in the form of a pattern and at least a portion of the pattern has an aspect ratio of greater than or equal to about 5.

23. A method of forming a conductive pattern, comprising:
illuminating a photographic film with a desired illumination configuration;
developing the photographic film so that illuminated or non-illuminated portions of the film are adjusted to be in an altered state; and

selectively depositing additional conductive material onto portions of the film in an altered state in amounts greater than amounts of conductive material deposited on portions of the film not in the altered state.

5 24. The method of claim 23 wherein the additional conductive material is deposited via electroless deposition.

 25. The method of claim 24 further comprising electroplating additional metal on the metal deposited via the electroless deposition.

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 26. The method of claim 23 wherein the conductive pattern is a circuit.

 27. A method of forming a discontinuous metallic structure comprising:
 illuminating a photographic film with a desired structure configuration;
15 developing the photographic film so that illuminated or non-illuminated portions of the film are adjusted to be in an altered state; and
 selectively depositing additional conductive material onto portions of the film in an altered state in amounts greater than amounts of conductive material deposited on portions of the film not in the altered state.

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 28. The method of claim 27 wherein the additional conductive material is deposited via electroless deposition.

 29. The method of claim 28 wherein the additional conductive material is
25 nickel.